



# Science, Technology, & More!



First MP Project

Pringle Challenge

**Concept.** Find a way to protect a single Pringle chip sent through the mail.

- \* Work with a partner OR by yourself.
- \* Document your process of design, engineering, and manufacture.
- \* Assess your success and compare it to other projects completed at UMAHS.

**Contest.** In addition to the grade you receive, we will measure your project in class, calculate its score, and compare your results with other projects. These measurements will NOT reveal your grade for the project, and it is possible to win the Contest without getting a good grade, and vice versa.

The equation to calculate your score will be:

$$\text{Score} = \frac{\text{Intact-ness}}{(\text{Mass}) * (\text{Volume})}$$

Intact-ness	Description	Score
Perfectly Intact	Like it left the factory	100 million
Slightly Damaged	Cracked, but still in one piece	50 million
Chipped Chip	Five or fewer chips on the edge	10 million
Split Chip	Broken into two fairly equal parts	10 million
Badly Damaged	Broken into fewer than 20 pieces	5 million
Pringle Dust	Too many pieces to count	1 million

**Grades.** Apart from the score you receive in the contest, your work will be graded in three different areas, with details on the back of this page

- Documentation
- Production
- Reflection

All of the information on this page is also available at my website, behind this icon!

Pringle  
Challenge



**Deadlines.** There will be three deadlines associated with the project. Failure to meet any of these deadlines will result in a 1 QP reduction in your overall grade.

- On Thursday, September 26, a Project Proposal will be filled out in class describing plans for the project and identifying any partnership formed.
- On Thursday, October 9, a Progress Report will be filled out in class documenting the project's current status and the results of preliminary testing.
- On Thursday, October 16, the Finished Project will be brought to class to participate in the Pringles Challenge.



# First MP Project

## Pringle Challenge



# Task Checklist

You will be given three separate grades for this project:

## Documentation, Production, Reflection.

Here's a Checklist to Help You Get Started...

PRODUCTION	For a <b>C</b>	Find/make a container to protect a Pringle.
	For a <b>B</b>	Make careful measurements of your container, and use the website to predict its contest score.
	For an <b>A</b>	Work to improved your contest score, from first prototype to final product (and provide documentation of your improvements).

DOCUMENTATION	For a <b>C</b>	Continue to refine your "form and function" diagram as you improve your container.
	For a <b>B</b>	Collect three possible containers. List their strengths and weaknesses (volume, mass, protection).
	For an <b>A</b>	Document how the three containers perform in three different tests (drop test, toss test, stack test, or some other test you think of!).

THREE RS		Is your container made <b>ONLY</b> of materials that can be recycled? (Multiple materials must be easily separated as it passes by workers on a conveyor belt.)
		Can your container be <b>REUSED</b> at least five times as a Pringle Protector, or for some other practical purpose?
		If you answer "No" to both of the questions above, work to <b>REDUCE</b> the amount of material used as much as you can!